

Case report: A prototypical spontaneous 'sensed presence' of a sentient being and concomitant electroencephalographic activity in the clinical laboratory

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The sensed presence of a 'Sentient Being' has been hypothesized to be the transient awareness of the right hemispheric equivalent of the left hemispheric sense of self. When the clinical context is supportive for the expression of anomalous cognition, the experience is reported frequently by patients who display complex partial epileptic-like symptoms and signs following a mild closed head injury. This article describes a patient with a history of presences subsequent to a 'mild' closed head injury who reported strong experiences during an electroencephalographic screening within a very quiet and darkened setting at the end of a day of neuropsychological assessments. The right-sided presence was preceded by the sensation of an 'electric shock' through the right hand and then both hands. Whole body 'icy coldness' and then vibrations 'moved' through her entire body. The experiences were concomitant with paroxysmal irregular 4–5-Hz activity over the temporal lobes. This case illustrates that many sensed presences might be similar to 'epileptic auras' for patients who also display elevated complex partial epileptic-like experiences following closed head injuries and that close attention to typically ignored electroencephalographic 'transients' may be helpful indicators.

Keywords: Seizures; Electroencephalography; The sensed presence; Closed head injury; Theta activity.

INTRODUCTION

The sensed presence has been hypothesized to be the awareness of the right hemispheric equivalent of the left hemispheric sense of self (Persinger, 1993a, 2003). Paroxysmal feelings of 'somebody being nearby' have usually been associated with extreme conditions within the temporal lobes (Ardila & Gomez, 1988; Arzy, Seeck, Origue, Spinelli, & Blanke, 2006; Landtblom, 2006). In our clinical setting (Persinger, 1993b) more than half the numbers of individuals who have sustained mild closed head injuries, without the loss of consciousness or recordable posttraumatic amnesia, report the

occurrence of a sensed presence of a 'Sentient Being' during the year subsequent to the injury.

A presence attributed to the left side of the body is described as apprehensive or negative in about 80% of the cases and neutral in the remaining 20% of the cases (Persinger, 1993b, 1994). A presence attributed to the right side is often described as pleasant (65% of patients), neutral (30%) or negative (5%). The sex of the 'presence' is opposite to that of the person experiencing it in about 90% of the cases. These proportions are based upon the reports of approximately 500 patients assessed over a 20-year period (Persinger, 1993a,b, 1994, 1995; Persinger & Healey, 2002).

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Regardless of the lateralization of the presence or the attributed gender patients with a history of mild head injuries who report a sensed presence often are distressed by these phenomena and display a marked elevation of subjective experiences similar to those reported by patients with diagnosed partial complex epilepsy with a focus within the temporal or limbic lobes (Gloor, Salanova, Olivier, & Quesney, 1993; Persinger & Makarec, 1993; Roberts et al., 1992). Without appropriate treatment many of these patients become depressed and display suicidal ideation (Persinger, 1994). We have found that neurocognitive restructuring, that is explaining the brain-basis to the experiences and equipping the patient with strategies for eliminating or reducing the incidence of the presences, facilitates adaptation following this class of brain trauma (Persinger, 1993b).

The experience of the presence occurs primarily at night, usually between midnight and 04:00 h local time (Persinger, 2001). On the bases of reports of patients stimuli that enhance right hemispheric stimulation, such as a warm bath, or the duration following a day of marked stimulation of the right prefrontal regions, such as travelling or negotiating novel shopping malls, increase the probability of these experiences. According to clinical reports from the patients the duration of a single episode of a presence is in the order of 1–100 s. The episodes can occur in temporal clusters and range between more than once per day to once per month during the first 2 years following the brain trauma.

Rarely are these experiences reported while electroencephalographic measurements are in progress. In this paper a patient with a history of a frightening sensed presence reported presences during a recording while a relatively discrete signature was occurring over the temporal lobes. This case was considered illustrative because her neuropsychological profile reflected the typical patient, male or female, who reports these experiences following mild head traumas and who display concurrent, elevated complex partial epileptic-like experiences as inferred by norm-referenced psychometric testing.

PATIENT AND METHODS

The woman was 50 years old. She had been married for 30 years and had been employed as a clerk. There had been no reported history of

psychological or neurological issues before the injury. Two years before the assessment she had sustained an impact of mechanical energy to her body during the collision between the automobile in which she was a passenger and another vehicle. There was no apparent loss of consciousness and minimal retrograde or anterograde dysnesia. The Glasgow Coma Scale score was 15 upon examination in an emergency ward and a subsequent CT was normal. A structured neuropsychological interview indicated that since the injury she had experienced a change in the sense of smell, tinnitus and mumbling sounds like people talking (attributed to the right ear), flashing lights in the upper right visual field, time loss, and occasional transient paresis of both legs.

Within days following the injury she began experiencing the sensed presence of a male along the left side of her body; the experience was associated with panic. The experiences were more intense when she felt 'stressed' during which time she could 'perceive' him as a dull outline or form. After retiring around midnight, she would often suddenly awaken between 02:00 and 04:00 h and feel the presence in her bedroom. She reported enhanced problems with depression, memory, concentration, understanding others (particularly in noisy settings or when many people were talking) irritability, diminished libido, and anxiety since the injury. Marital problems had increased. The patient felt as if she was not the same person as she was before the injury and 'wanted her old personality back'. There was no change in her religious beliefs. She did not smoke cigarettes or drink ethanol. She was self-medicating with Tylenol 3 for pain attributed to a whiplash injury from the incident but had not been prescribed any neuroleptic or antiepileptic compounds.

Her neurological examination was normal. She was unstable when standing on either leg with the eyes closed; there was a positive Romberg sign with a drift to the right. There was a mild olfactory agnosia for the right nostril. During a 2-day period she was administered a full neuropsychological assessment. The neuropsychological, cognitive, and personality tests have been described previously (Persinger, 1995). Data were presented as z-scores based upon age-adjusted norms. The patient preferred her right arm, foot and eye for interacting with the environment.

After the first full day of neuropsychological testing the patient sat within a comfortable chair within a quiet, darkened (acoustic) chamber for 45 min.

Bipolar activity was recorded by a P79 Grass system (external to the chamber) over the prefrontal (F7,F8), temporal (T3,T4) and occipital (O1,O2) for 30 min followed by 5 min each of various hemispheric combinations (F7–T3,F8–T4). For context (and comparison) the same measurements with this montage had been obtained from about 500 patients and 500 university students for various undergraduate and graduate theses over the last 20 years. About 10% of the patients, in this setting, have shown classic epileptiform transients over the temporal lobes (usually the right) or non-specific occipital anomalies such as Positive Occipital Sharp Transients of Sleep during the transition from Stage 1 to Stage 2. However during the measurement of this patient anomalous EEG events occurred concomitantly with her waking subjective experiences and reports. The configuration of recording was adjusted to discern over which temporal lobe the paroxysmal activity was occurring.

RESULTS

The patient reported a sensation like an 'electric shock' through her right hand and then both arms and hands became icy cold. She felt vibrations moving through her body and then she suddenly felt the presence. She described it as 'the same' as the usual presence except she did not see him but

only felt him and it occurred on the right (not left) side. Unlike previous episodes she was not scared. The estimated time of the experience during the record based upon her response to the question if anything unusual had happened is noted in Figure 1. The patient was in Stage 1 with prominent alpha rhythms (no alpha dropout) over the occipital region and beta activity over the prefrontal area. The temporal region began showing subtle changes for about 20 s before the gross onset of 4–5-Hz sharp waves for about 5 s followed by discrete spikes.

Before the 'wave' happened again we changed the configuration of the input so we could monitor the left and right temporofrontal potentials. As can be seen in Figure 2 the source of the paroxysmal pattern was over the left temporal region when the experienced the presence a second time. After the recording was finished, a neuropsychological explanation for the sensed presence was discussed with the patient. She reported relief that she was 'not going crazy'.

With respect to psychological and neuropsychological test results, the patient displayed average *z*-scores (between -1.0 and $+1.0$) for verbal intelligence, performance intelligence, receptive vocabulary (Peabody Picture Vocabulary Test), general memory (Wechsler Memory Scale), reading, spelling, and arithmetic (Wide Range Achievement Test). Her Halstead-Reitan Impairment Index was 0.6.

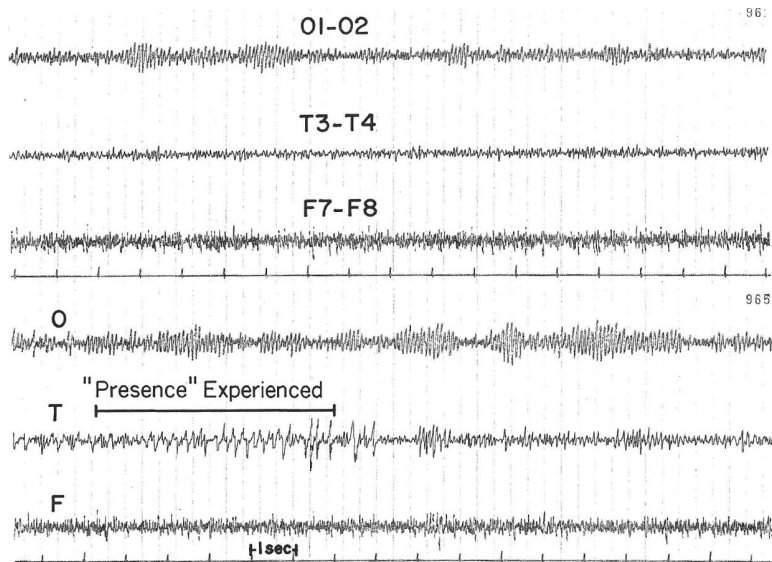


Figure 1. Bipolar electroencephalographic activity over the occipital (O1,O2), temporal (T3,T4) and prefrontal (F7,F8) lobes in the patient before (upper panel) and during her report of a sudden 'sensed presence' while sitting in a quiet, darkened chamber (lower panel). Bottom line shows 1-s increments.

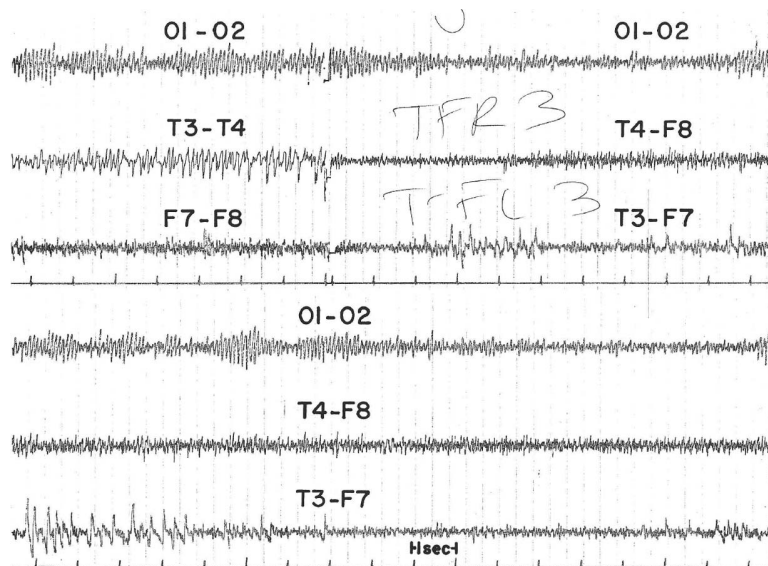


Figure 2. The second occurrence of the 'sensed presence' during bipolar recording (first half of upper panel) and the third occurrence after the comparisons were shifted to T4-F8 (right hemisphere) and T3-F7 (left hemisphere). Note the 3–4-Hz 'discharges' over the left but not the right temporal lobe. Bottom lines indicate 1-s increments.

She showed normal scores for Trails A, Trails B, Seashore Rhythm, Speech Sounds, Auditory Closure, Hooper Visual Organization, the Tactual Performance Test (TPT) for the dominant and non-dominant hand, TPT memory, Rey-Osterich copy, verbal fluency, written fluency, design fluency, Stroop Test (interference), sentence memory, spatial span, and digit span.

Her scores were average for left and right appendages for finger gnosis, finger graphaesthesia, and the grooved pegboard (an inference of manipulative dexterity). She displayed below normal z-scores for left toe gnosis (–2.6) but average scores for the right toe (0.2), toe graphaesthesia (right –2.0, left –2.1), foot tap (right –3.9; left –2.9), finger tap (right –2.0, left –2.0), TPT both hands –2.1, TPT localization (–2.1), Rey-Osterich recall (after 30 min): –3.0, conditioned spatial association tasks –4.0, Category Test –2.0, dichotic word listening for the left ear (–3.0) but normal scores for the right ear (–1.6), Rey's Auditory-Verbal Learning Test (first trial –2.3, fifth trial –2.3).

Her score for Roberts' inventory (Roberts et al., 1992) for the Epileptic Spectrum Disorder was +5.6. The only significantly elevated scales for the MMPI (Minnesota Multiphasic Personality Inventory) were Hypochondria +2.1 and Hysteria +2.1 (Depression was +1.5). IPAT anxiety scores were all between –0.5 and +0.5. Her Cattell's 16PF personality profile, which we have found (based upon

the reports of the families and patients as well as their initial vocations) strongly reflects the patient's preinjury personality, showed elevated scores for the factors outgoing +1.8, conscientiousness +2.0 and humility +1.5. Scores for all other factors were within the average range.

DISCUSSION

Although over the last 20 years we have assessed hundreds of patients who reported the emergence of a sensed presence after they sustained what would be considered neurologically 'mild closed head injuries' or 'concussions' without loss of consciousness, this is the first time the reports of a strong 'sensed presence' and related sensations occurred 'spontaneously' while our screening electroencephalographic measurements were in progress. In previous studies we recorded a brief 3–4-Hz paroxysmal pattern over the temporal lobe of an experienced meditator while she was experiencing a particular powerful presence, described as 'god's presence in the laboratory' (Persinger, 1984). We have also elicited very fast paroxysmal discharges over the right temporal lobe of a 'temporal lobe sensitive' individual by applying a 1 microTesla, frequency-modulated magnetic field for 15 min over that region (Persinger, Tiller, & Koren, 2000). The conspicuous 'electrical seizures'

were concomitant with the experience of a 'terrifying entity and an apparition'.

In the present case the patient experienced a sensed presence that was identified as similar to the one that she experienced frequently since the mechanical impact to her body. The experiences only began after the impact and were associated with a marked elevation in experiences similar to those of patients with verified complex partial epileptic seizures. The occurrence of the electrical anomalies over the left temporal lobe in this instance rather than the right would be consistent with the observation that right-sided presences tend to be reported as less aversive than left-sided presences (Persinger, 1993b). About 10% of our patients who have sensed presences following mild closed head injuries the presences are reported to occur on either the left or right side at various times and are associated with the expected affective state (aversive or positive, respectively).

The neuropsychological impairments are consistent with anomalies within the right medial and orbital prefrontal region and the left hippocampus. The latter would be congruent with the surprisingly poor short-term memory for words without compromise of digit or spatial span. The impaired scores for left toe gnosis and left ear perception during dichotic word listening would suggest hypo-function within the right paracentral lobule and adjacent corpus callosum. Brief activation of these 'hypometabolic' regions might simulate a seizure focus that would allow intrusions of right hemispheric experiences (attributed to the left side) into awareness. They would be dominated by the characteristics of these regions, such as hypervigilance (panic) and would be more likely during phasic periods such as the initial stages preceding rapid eye movement (dreams) at which time the person might 'suddenly awake' and feel the presence.

However during our measures in the laboratory the patient did not report an aversive experience with the presence and the electrical anomalies occurred over the left, not right, temporal lobe. This may have been affected by her waking (Stage 1) state at the time of the experience. Historically presences attributed to Muses (Persinger & Makarec, 1992) are more likely along the right side if the person is awake during a normal dream period (02:00–04:00 h). As shown by Landtblom (2006) who described a patient who reported a sensed presence and displayed bilateral hypoperfusion within the temporal lobe and hypoplasia of the left hippocampus, it is possible the 'seizure' in

the present study originated from the right temporal region and spread to a left-sided mirror focus. Such subcortical spreading might be possible through the dorsal hippocampal commissure (Gloor et al., 1993).

The results of this case also suggest the importance of clinical vigilance during routine electroencephalographic recordings of patients who have sustained a mild head injury and who subsequently experience enhanced complex partial epileptic-like experiences in settings that encourage the sensed presence. The transients associated with the sensed presence may be very brief, relatively focal, and not meet the criteria employed by many neurologists to be considered significant. Signatures that may reflect the occurrence of a powerful subjective process might also be dismissed or relegated to categories such as rhythmic mid-temporal theta of drowsiness that may occlude their potential significance for understanding the process and helping the patient.

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REFERENCES

- Ardila, A., & Gomez, J. (1988). Paroxysmal 'feeling of somebody being nearby'. *Epilepsia*, 29, 188–189.
- Arzy, A., Seeck, M., Origue, L., Spinelli, R., & Blanke, O. (2006). Induction of an illusory shadow person. *Nature*, 443, 3–4.
- Gloor, P., Salanova, V., Olivier, A., & Quesney, L. F. (1993). The human dorsal hippocampal commissure: An anatomically and functional pathway. *Brain*, 116, 1249–1273.
- Landtblom, A.-M. (2006). The 'sensed presence': An epileptic aura with religious overtones. *Epilepsy and Behavior*, 9, 186–188.
- Persinger, M. A. (1984). Striking EEG profiles from single episodes of glossolalia and transcendental meditation. *Perceptual and Motor Skills*, 58, 127–133.
- Persinger, M. A. (1993a). Vectorial cerebral hemisphericity as differential sources for the sensed presence, mystical experiences and religious conversions. *Perceptual and Motor Skills*, 76, 915–930.
- Persinger, M. A. (1993b). Personality changes following brain injury as a grief response to the loss of sense of self: Phenomenological themes as indices of local lability and neurocognitive restructuring as psychotherapy. *Psychological Reports*, 72, 1059–1068.
- Persinger, M. A. (1994). Sense of a presence and suicidal ideations following brain injury: Indications of right-hemispheric intrusions from neuropsychological profiles. *Perceptual and Motor Skills*, 75, 1059–1070.
- Persinger, M. A. (1995). Clinical neurological indicators are only moderately correlated with quantitative neuropsychological test scores in patients who

- display mild-moderate brain impairment following closed injuries. *Perceptual and Motor Skills*, 81, 1283–1292.
- Persinger, M. A. (2001). The neuropsychiatry of paranormal experiences. *Journal of Neuropsychiatry and Clinical Neuroscience*, 13, 515–524.
- Persinger, M. A. (2003). The sensed presence within experimental settings: Implications for the male and female concept of self. *The Journal of Psychology*, 137, 5–16.
- Persinger, M. A., & Healey, F. (2002). Experimental facilitation of the sensed presence: Possible intercalation between the hemispheres induced by complex magnetic fields. *Journal of Nervous and Mental Diseases*, 190, 533–541.
- Persinger, M. A., & Makarec, K. (1992). The feeling of a presence and verbal meaningfulness in context of temporal lobe function: Factor analytic verification of the Muses? *Brain and Cognition*, 20, 217–226.
- Persinger, M. A., & Makarec, K. (1993). Complex partial epileptic-like signs as a continuum from normals to epileptics: Normative data and clinical populations. *Journal of Clinical Psychology*, 49, 33–45.
- Persinger, M. A., Tiller, S. G., & Koren, S. A. (2000). Experimental simulation of a haunt experience and paroxysmal electroencephalographic activity by transcerebral complex magnetic fields: Induction of a synthetic ghost? *Perceptual and Motor Skills*, 90, 659–674.
- Roberts, R. J., Gorman, L. L., Lee, G. P., Hines, M. E., Richardson, E. D., Riggle, T. A., & Varney, N. R. (1992). The phenomenology of multiple partial seizure-like symptoms without stereotyped spells: An epileptic spectrum disorder? *Epilepsy Research*, 13, 167–177.

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